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M. Accounting & Finance

Assignment # 2 MTH 100
Fall 2016

Maximum Marks: 20
Due Date: 6th Febrauary, 2017

Question: 1	**Marks: 5**

Are the lines $6x+5y=21$ and $5x-6y=18$ parallel, perpendicular, or neither?

$$->6x+5y=21$$

$$5y=21-6x$$

$$y=\frac{21-6x}{5}$$

$$y=-\frac{6}{5}x+\frac{21}{5} \qquad => m=-\frac{6}{5}$$

$$5x-6y=18$$

$$-6y=18-5x$$

$$6y=5x-18$$

$$y=\frac{5}{6}x-\frac{18}{6}$$

$$=\frac{5}{6}x-3 \qquad => m=\frac{5}{6}$$

From the above given slopes, it is prove that the slopes are perpendicular.

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Question: 2	**Marks: 5**

Without using the calculator, find the exact value of Cos 240^o.

The reference angle for 240° is 60° (since $240^\circ=180^\circ+60^\circ$)
60° is an angle of one of the standard triangles with
$\cos(60^\circ)=1/2$
240° is in the 3rd quadrant so (either by CAST or noting that the "x-side" of the associate triangle is negative)
$\cos(240^\circ)= -\cos(60^\circ)$
$\cos(240^\circ)= -1/2$

Question: 3	**Marks: 10**

Expand by using Binomial theorem $(5-x)^6$

$$x^6 - 30x^5 + 375x^4 - 2500x^3 + 9375x^2 - 18\,750x + 15\,625$$